

University of Windsor

Scholarship at UWindsor

Research Result Summaries

Spring 4-5-2018

Comparison of two sections of a business course utilizing different weekly quizzing methods

William J. Wellington

University of Windsor, r87@uwindsor.ca

Mark Lubrick

University of Windsor, mlubrick@uwindsor.ca

Follow this and additional works at: <https://scholar.uwindsor.ca/research-result-summaries>

Consistent with the TCPS 2 (4.7) this is a research summary provided to participants and should not be considered a formal publication of results.

Recommended Citation

Wellington, W. J., & Lubrick, M. (2018). Comparison of two sections of a business course utilizing different weekly quizzing methods. Retrieved from <https://scholar.uwindsor.ca/research-result-summaries/17>

This Completed Summary is brought to you for free and open access by Scholarship at UWindsor. It has been accepted for inclusion in Research Result Summaries by an authorized administrator of Scholarship at UWindsor. For more information, please contact scholarship@uwindsor.ca.

Summary Results for Comparison of two sections of a business course utilizing different weekly quizzing methods

William Wellington

University of Windsor

Mark Lubrick

University of Windsor

ABSTRACT

The impact of a series of low-stakes multiple choice quizzes as a formative learning tool on learning performance outcomes using a minimum target grade was studied. The subjects were 489 students from two different semester groups of a large-lecture introductory marketing class, Fall (n=172) and Winter (n=317). The Fall group was evaluated using a best grade performance assessment system (BG) while the Winter group was evaluated using a target grade performance assessment system (TG). The learning performance outcomes were measured using midterm and final examination results. An ANOVA analysis was undertaken using major, university experience, number of weekly meetings, number of hours on the LMS, and class participation as covariates. The ANOVA results indicated that the TG group had statistically significant higher examination grades than the BG group indicating that a “Targeted Grade” performance assessment approach was more beneficial as a motivation for formative learning than a “Best Grade” approach.

ANOVA Comparison of Means of Performance Measures Using Semester Level, Major, Number of Class Meetings, Hours on the LMS and Class Participation as Covariates

Performance Measure	Target Performance Group			Best Performance Group			ANOVA Results	
	N	Mean	SD	N	Mean	SD	F	Sig.
Midterm MCQ (Max 65)	317	43.15	9.10	172	41.52	8.98	8.84	.000**
Final Exam MCQ (Max 93)	317	64.98	14.37	172	57.65	13.73	15.63	.000**
Final Exam Essay (Max 7)	317	5.06	1.79	172	4.33	2.02	12.31	.000**
Hours Spent on LMS (a)	317	16.16	10.79	172	18.00	12.35	9.12	.000**
Class Participation (Max 5) (b)	317	3.49	1.44	172	2.99	1.44	21.01	.000**
Course % Grade (Max 100)	317	70.92	12.81	172	65.76	14.09	16.32	.000**
Alternative Exercise (Max 3)	317	1.76	1.32	172	1.39	1.27	21.88	.000**
Practice Midterm (Max 25)	251	18.51	3.27	129	19.35	3.26	10.34	.000**
Practice Final (Max 25)	234	17.37	3.73	121	16.50	4.22	9.87	.000**
Chapter Quizzes (Max 80)	317	53.20	12.84	172	50.05	17.23	42.61	.000**
+AOL Exercise (Max 50)	317	38.21	5.90	114	29.35	8.90	34.57	.000**
(a) Analyzed without Hours on LMS as a covariate. (b) Analyzed without Class Participation as a covariate. ** Significant P < .05 + Exercise was mandatory for Target Performance Group and Optional for Best Performance Group								

ANOVA Comparison of Online Quiz Means By Attempt Number Using Semester Level, Major, Number of Class Meetings, Hours on the LMS and Class Participation as Covariates

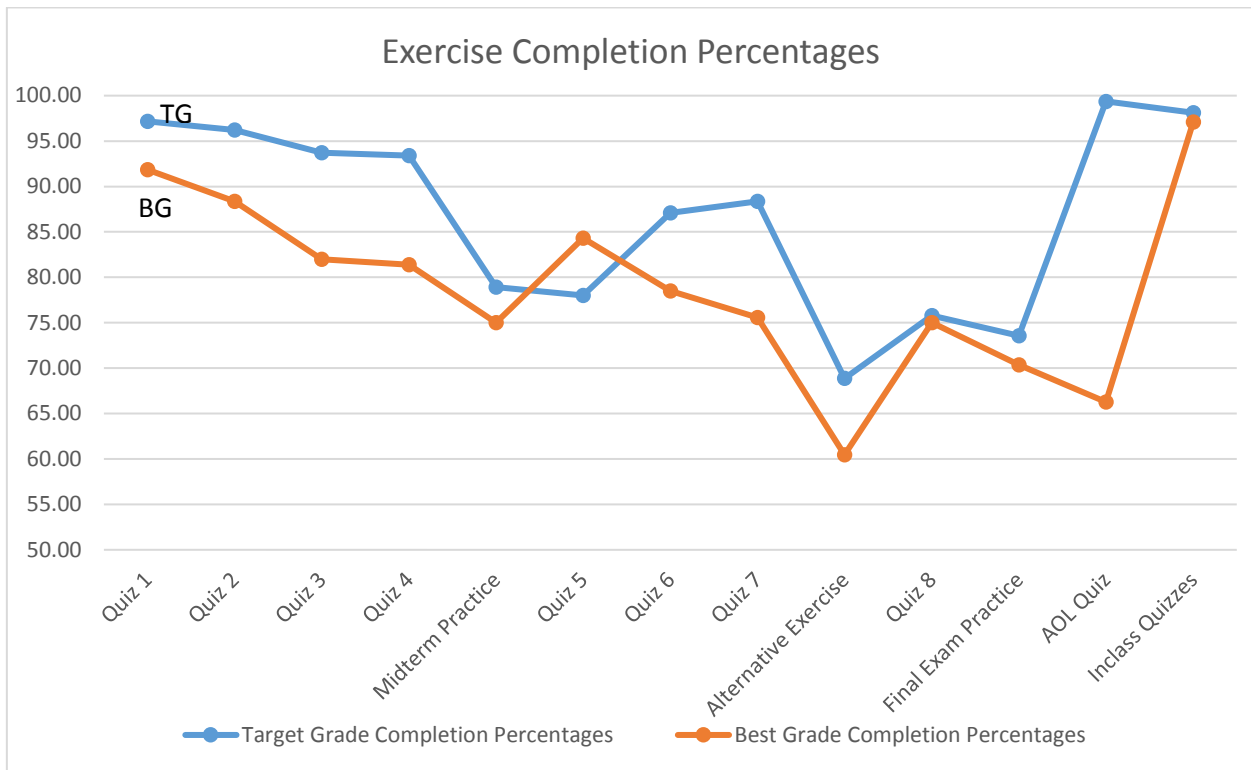
Quiz # and Grade	Target Performance Group			Best Performance Group			ANOVA Results	
	N	Mean	SD	N	Mean	SD	F	Sig.
Quiz 1 Max Grade	308	7.20	1.48	158	7.80	1.44	7.45	.000**
Quiz 2 Max Grade	306	7.32	1.42	152	7.55	1.46	7.39	.000**
Quiz 3 Max Grade	298	7.24	1.22	141	7.33	1.49	3.85	.001**
Quiz 4 Max Grade	297	7.73	1.33	141	7.88	1.41	7.24	.000**
Quiz 5 Max Grade	248	7.70	1.23	145	7.90	1.59	4.57	.000**
Quiz 6 Max Grade	276	7.50	1.38	135	7.06	1.76	11.08	.000**
Quiz 7 Max Grade	280	7.48	1.39	130	7.68	1.64	8.62	.000**
Quiz 8 Max Grade	240	7.83	1.29	129	7.71	1.58	8.03	.000**
Quiz 1 Attempt 1	308	6.24	1.91	158	5.72	2.08	4.38	.000**
Quiz 2 Attempt 1	306	6.27	1.91	152	5.76	2.07	5.52	.000**
Quiz 3 Attempt 1	298	6.20	1.71	141	5.65	1.93	4.62	.000**
Quiz 4 Attempt 1	297	6.82	1.92	141	6.54	1.91	2.82	.011**
Quiz 5 Attempt 1	248	6.72	1.82	145	6.37	1.84	2.86	.010**
Quiz 6 Attempt 1	276	6.22	2.05	135	5.67	1.84	5.01	.000**
Quiz 7 Attempt 1	280	6.41	1.93	131	5.87	2.11	4.48	.000**
Quiz 8 Attempt 1	240	6.90	1.91	129	6.55	2.00	2.62	.017**
** Significant P < .05								

* Marginally Significant P < .10

+ Exercise was mandatory for Target Performance Group and Optional for Best Performance Group

Correlation of Overall Chapter Quiz Performance With Exam Performance By Assessment Group

Course Performance Measure	All Chapter Quiz Grades (Max 80)					
	Target Performance Group			Best Performance Group		
	N	r-value	Sig.	N	r-value	Sig.
Midterm Exam Grades (Max 65)	318	.275	.000**	172	.375	.000**
Final Exam MCQ Grade (Max 93)	318	.359	.000**	172	.339	.000**
Final Exam Essay Grade (Max 7)	318	.362	.000**	172	.364	.000**
** Significant P < .05						



The research reported here sought to explore whether students who were exposed to an online testing system with a target grade performance outcome motivation (TG) would outperform students who were exposed to a best grade performance outcome motivation (BG) on midterm and final exams. The findings indicate that the TG group of students did outperform the BG group. In fact, in virtually every measured aspect of the course, except the online practice midterm and maximum raw quiz scores, the TG group outperformed the BG group.